

Office Action Summary**Application No.**

09/963,487

Applicant(s)

ROCHON ET AL

Examiner

CHRISTOPHER GREY

Art Unit

2474

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51, 53-55, 57 and 58 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-51, 53-55, 57 and 58 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/ISD/63)
- Paper No(s)/Mail Date ____.

- 4) ☒ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

1. This application is in condition for allowance except for the following formal matters:
2. In order to avoid any 101 and 112 2nd Para ambiguity, that claims should be amended as follows:

Claim 1. (Currently Amended) A method of regulating packet flow through a device having a processing fabric with at least one input port and at least one output port, a control entity connected to the at least one input port for regulating packet flow thereto, and a plurality of egress queues connected to the at least one output port for temporarily storing packets received therefrom, said method comprising:

obtaining bandwidth utilization information via a hardware (or physical) processing entity,

regarding packets received at the egress queues, wherein obtaining said bandwidth utilization information includes determining the amount of bandwidth consumed by packets received at each of said egress queues;

determining, from the bandwidth utilization information and the amount of bandwidth consumed by packets received at each of said egress queues, a discard probability associated with each egress queue; and

providing the discard probability associated with each egress queue to the control entity, for use by the control entity in selectively transmitting packets to the at least one input port of the processing fabric.

Claim 37. (Currently Amended) A drop probability evaluation **hardware or physical** module for use in a device having (i) a processing fabric with at least one input port and at least one output port; (Ji) a control entity connected to the at least one input port for regulating packet flow thereto; and (iii) a plurality of egress queues connected to the at least one output port for temporarily storing packets received therefrom, said drop probability evaluation module comprising:

means for obtaining bandwidth utilization information, regarding packets received at the egress queues, wherein obtaining said bandwidth utilization information includes determining the amount of bandwidth consumed by packets received at each of said egress queues;

means for determining, from the bandwidth utilization information and the amount of bandwidth consumed by packets received at each of said egress queues, a discard probability associated with each egress queue;

and

means for providing the discard probability associated with each egress queue to the control entity, for use by the control entity in selectively transmitting packets to the at least one input port of the processing fabric.

Claim 38. (Currently Amended) A drop probability evaluation **hardware or physical** module for use in a device having (i) a processing fabric with at least one input port and at least

one output port; (ii) a control entity connected to the at least one input port for regulating packet flow thereto; and (iii) a plurality of egress queues connected to the at least one output port for temporarily storing packets received therefrom, said drop probability evaluation module including:

an allocation processing entity, for determining an allocated traffic bandwidth for each of the egress queues; and

a probability processing entity in communication with the allocation processing entity, said probability processing entity being adapted to receive the allocated traffic bandwidth for each of the egress queues from the allocation processing entity and also adapted to receive an average number of received traffic bytes, per time unit, for each of the egress queues from an external entity, the probability processing entity being operable to:

compare the average number of received traffic bytes for each particular one of the egress queues to the allocated traffic bandwidth for the particular egress queue; and

set the discard probability for the particular egress queue to the sum of a time average of previous values of the discard probability for the particular egress queue and either a positive or a negative increment, depending on whether the average number of received

traffic bytes for the particular egress queue is greater or less than the allocated traffic bandwidth for the particular egress queue.

Claim 46. (Currently Amended) A method of regulating packet flow through a device having an ingress entity, an egress entity, a processing fabric between the ingress entity and the egress entity, and a physical or hardware control entity adapted to process packets prior to transmission thereof to the ingress entity, said method comprising:

obtaining congestion information regarding packets received at the egress entity, wherein obtaining said congestion information includes determining the amount of bandwidth consumed by packets arriving at the egress entity; and

providing the congestion information to the control entity, for use by the physical or hardware control entity in processing packets prior to transmission thereof to the ingress entity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER GREY whose telephone number is (571)272-3160. The examiner can normally be reached on 10AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Moe Aung can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher P Grey/
Primary Examiner, Art Unit 2474